DOCUMENT RESUME

ED 471 738 HE 035 571

AUTHOR	Powner, David A.
TITLE	Federal Student Aid: Progress in Integrating Pell Grant and Direct Student Loan Systems and Processes, but Critical Work Remains. Report to the Secretary of Education.
INSTITUTION	General Accounting Office, Washington, DC.
REPORT NO	GAO-03-241
PUB DATE	2002-12-00
NOTE	29p.
AVAILABLE FROM	U.S. General Accounting Office, 441 G Street NW, Room LM, Washington, DC 20548. Tel: 202-512-6000; Fax: 202-512-6061. For full text: http://www.gao.gov/cgi-bin/getrpt?GAO-03-241.
PUB TYPE	Reports - Evaluative (142)
EDRS PRICE	EDRS Price MF01/PC02 Plus Postage.
DESCRIPTORS	*Database Management Systems; *Information Dissemination; *Integrated Activities; *Student Financial Aid; Student Loan Programs; *Systems Development

ABSTRACT

To address system problems and other management weaknesses, in 1998 Congress created the Office of Federal Student Aid (FSA) within the Department of Education. This office adopted a new approach to systems integration using middleware (software that can allow an application to access data residing indifferent databases) and Extensible Markup Language (XML), a flexible nonproprietary set of standards that is intended to make it easier to identify, integrate, and process information widely dispersed among systems and organizations. FSA first used this approach in the Common Origination and Disbursement (COD) Process for the Direct Loan, Pell Grant, and campus-based programs. This study was a follow-up review by the General Accounting Office (GAO) to assess FSA's progress in implementing this process. Data were from a variety of sources, including review of FSA documentation and reports from outside contractors. The GAO concludes that FSA has made progress in implementing the COD process, although implementation is behind schedule. The GAO has made recommendations to improve the process, and among these is the recommendation that the Secretary of Education direct the Chief Operating Officer, FSA, to establish a process to capture and disseminate lessons learned in schools. Appendixes contain a diagram of the COD process and comments from the FSA about the report. (SLD)

HE
HE 20056

United States General Accounting Office

GAO

Report to the Secretary of Education

December 2002

ED 471 738

FEDERAL STUDENT AID

Progress in Integrating Pell Grant and Direct Loan Systems and Processes, but Critical Work Remains

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

HE 20.8551:11

GAO

Accountability • Integrity • Reliability

GAO-03-241

BEST COPY AVAILABLE

December 2002

GAO
Accountability · Integrity · Reliability

Highlights

Highlights of GAO-03-241, a report to the Secretary of Education

FEDERAL STUDENT AID

Progress in Integrating Pell Grant and Direct Loan Systems and Processes, but Critical Work Remains

Why GAO Did This Study

To address system problems and other long-standing management weaknesses, in 1998, the Congress created a discrete unit within the Department of Education, the Office of Federal Student Aid (FSA). This office subsequently adopted a new approach to systems integration using middleware (a type of software that can allow an application to access data residing in different databases) and Extensible Markup Language (XML)—a flexible, nonproprietary set of standards that is intended to make it easier to identify, integrate, and process information widely dispersed among systems and organizations.

FSA's first use of this approach is the Common Origination and Disbursement (COD) process for the Direct Loan, Pell Grant, and campus-based programs. GAO initiated a follow-up review to assess FSA's progress in implementing this process.

What GAO Recommends

Among GAO's recommendations is that the Secretary of Education direct the Chief Operating Officer, FSA, to establish a process to capture and disseminate lessons learned to schools.

In commenting on a draft of this report, FSA provided updated information and technical comments. GAO modified the report to address this new information, as appropriate.

www.gao.gov/cgi-bin/getrpt?GAO-03-241.

To view the full report, including the scope and methodology, click on the link above. For more information, contact David A. Powner at (202) 512-9286 or pownerd@gao.gov.

What GAO Found

FSA has made progress in implementing the COD process. Specifically, it has implemented

- a new information technology infrastructure that uses middleware to enable data exchange among disparate systems;
- the initial version of the basic COD system, which replaces two existing systems and is being used by schools participating in the Pell Grant and Direct Loan programs;
- middleware into existing systems to support the COD process; and
- a common record based on XML that schools can use to submit student financial data for the Pell Grant and Direct Loan programs.

However, the implementation of the COD process is behind schedule, and its ultimate success hinges on FSA's completing critical work, including addressing serious postimplementation operational problems, and having thousands of postsecondary schools implement the common record. Further, there are important elements to managing any information technology investment that FSA has not yet completed:

- *Determining whether expected benefits are being achieved.* As illustrated below, FSA has only some of the metrics, baseline data, and tracking processes necessary to determine whether it is achieving all expected benefits.
- *Tracking lessons learned.* FSA has relied on an ad hoc approach for gathering and disseminating lessons learned related to schools' implementation of the common record. To address this issue, FSA plans to include lessons learned as part of an update to its school testing guide. However, this does not replace the need for an ongoing mechanism to capture and disseminate lessons learned, without which schools may encounter problems that could have been avoided or mitigated.

Status of the Office of Federal Student Aid Tracking of Actual Benefits of the COD System

Expected benefit	Metrics defined?	Baseline data available?	Benefits tracked?
Reduced cost	Yes	Yes	Yes[a]
Increased customer satisfaction	Partially[b]	Partially	No
Increased employee satisfaction	N/A[c]	N/A	N/A
Increased financial integrity	Partially[d]	Partially	Partially
Integration and modernization of legacy systems	Yes	Yes	Yes

[a]In providing comments on a draft of this report, FSA stated that it has begun tracking this expected benefit and provided supporting documentation, which we did not validate.
[b]FSA stated that at this time, it did not have approval from the Department of Education to perform the surveys that it had planned to use to validate this benefit. However, FSA stated that it is trying to identify alternative metrics to measure customer satisfaction improvements due to COD.
[c]Not applicable; although this was identified in the COD business case as an expected benefit, in commenting on a draft of this report, FSA stated that it is no longer using this as a COD benefit.
[d]Not all metrics for this expected benefit have been defined.

Source: GAO analysis on the basis of FSA documentation.

BEST COPY AVAILAB

Contents

Letter 1

Results in Brief 3
Background 4
Progress in Implementing the COD Process, but Critical Work Remains, and Benefits and Lessons Learned Are Not Being Tracked 7
FSA Is Not Completely Tracking Actual COD Benefits or Lessons Learned Related to Schools' Implementation of the Common Record 10
Conclusions 13
Recommendations 13
Agency Comments and Our Evaluation 14

Appendix I **Systems and Technologies Supporting the Common Origination and Disbursement Process, as of November 2002** 16

Appendix II **Comments from the Department of Education's Office of Federal Student Aid** 18

GAO Comments 22

Tables

Table 1: Status of FSA Tracking of Actual Benefits of the COD System 11
Table 2: Examples of Lessons Learned Related to School Migration to the Common Record 13

Abbreviations

COD	Common Origination and Disbursement
EAI	Enterprise Application Integration
FSA	Office of Federal Student Aid
IT	information technology
XML	Extensible Markup Language

GAO
Accountability * Integrity * Reliability

United States General Accounting Office
Washington, DC 20548

December 31, 2002

The Honorable Roderick R. Paige
The Secretary of Education

Dear Mr. Secretary:

Over the past decade, the Department of Education has spent millions of dollars to modernize and integrate[1] its disparate financial aid systems in an effort to improve the administration of its programs and provide more information and greater service to its customers—students, parents, schools, and lenders. However, as we reported last year, the department's efforts had achieved limited success.[2] In January 1993, for example, the department awarded a 5-year, $39 million contract for the development and maintenance of the National Student Loan Data System, which was to provide information on systems across programmatic boundaries, yet it often lacks the most recent information from other financial aid systems.

To address such systems problems and other long-standing management weaknesses, in 1998, as you know, the Congress created the federal government's first performance-based organization,[3] currently called the Office of Federal Student Aid (FSA).[4] Under the performance-based organization concept, FSA is a discrete organizational unit within the Department of Education, led by its own Chief Operating Officer. FSA focuses on managing the operation of the student financial assistance

[1]Information integration is defined by the National Institute of Standards and Technology as the establishment of the appropriate computer hardware/software, methodology, and organizational environment to provide a unified and shared information management capability for a complex business enterprise.

[2]U.S. General Accounting Office, *Student Financial Aid: Use of Middleware for Systems Integration Holds Promise*, GAO-02-7 (Washington, D.C.: Nov. 30, 2001).

[3]The Higher Education Amendments of 1998, which amended the Higher Education Act of 1965, states that the responsibilities of the performance-based organization include integrating the information systems supporting federal student financial assistance programs; implementing an open, common, and integrated system for delivery of student financial assistance under title IV; and developing and maintaining a student financial assistance system that contains complete, accurate, and timely data to ensure program integrity.

[4]Financial aid programs are administered by an office previously known as the Office of Student Financial Assistance, which was changed to the Office of Federal Student Aid on March 6, 2002.

programs, while the Department of Education focuses on policy-making functions.

FSA subsequently adopted a systems integration approach that uses middleware[5] and Extensible Markup Language (XML)[6] technologies. In November 2001, we reported that in selecting middleware, FSA adopted a viable, industry-accepted mechanism for addressing its long-standing systems integration problems.[7] We also reported that FSA's first use of middleware and XML as part of a process for delivering Direct Loan and Pell Grant aid to students was expected in early 2002. This process, called the Common Origination and Disbursement (COD) process, was expected to use a new system, also called COD, and be supported by a new information technology (IT) infrastructure and various existing systems.

In the summer of 2002, we initiated a follow-up review to our November 2001 report. Our objective was to assess FSA's progress in implementing the COD process. In doing this work, we reviewed applicable FSA and Accenture (the prime contractor) documentation, including FSA's modernization blueprint, the COD business case, the COD system's requirements, the COD and Enterprise Application Integration implementation timelines, Accenture project status briefings, and test guides and results. In addition, we reviewed reports by an independent verification and validation contractor. We also interviewed applicable officials from FSA IT and program offices and Accenture.

We performed our work at FSA headquarters in Washington, D.C., between August and November 2002, in accordance with generally accepted government auditing standards.

[5]Middleware is a type of software that can allow an application to access data residing in different databases. In addition, middleware can enable dissimilar systems to communicate and work together as if they all resided on a single platform.

[6]XML is a flexible, nonproprietary set of standards that offers the promise of making it significantly easier to identify, integrate, and process information that is widely dispersed among systems and organizations.

[7]GAO-02-7.

Results in Brief

FSA has made progress in implementing the COD process.[8] Specifically, it has implemented (1) a new IT infrastructure that uses middleware to enable data exchange between disparate systems, (2) the initial version of the basic COD system, (3) middleware into existing systems to support the COD process, and (4) a common record based on XML that schools can use to submit student financial data for both the Pell Grant and Direct Loan programs. Nevertheless, the implementation of the COD process is behind schedule, and its ultimate success hinges on FSA's completing critical work, including the implementation of the basic COD system requirements, addressing serious postimplementation operational problems, and having thousands of postsecondary schools implement the common record.

Important elements of managing an IT investment are determining whether expected benefits are being achieved and tracking lessons learned. However, at this time, FSA is not fully tracking whether it is achieving certain expected benefits, such as increased customer satisfaction. In this instance, FSA COD officials stated that they did not have approval from the Department of Education to perform the survey that they had planned to use to validate this expected benefit, but they are trying to identify alternative metrics. Without such data, FSA lacks vital information on whether it is achieving all of its investment goals. Regarding lessons learned, FSA relies on an ad hoc approach to gathering and disseminating such information, which it believes is an adequate approach. However, such an ad hoc process may not ensure that all schools obtain these critical data. As a result, schools may encounter problems that could have been avoided or mitigated had they known of other schools' experiences.

We are making recommendations to improve the management of FSA's COD program, including recommending that you direct FSA's Chief Operating Officer to develop (1) metrics and baseline data that are related to increased customer satisfaction and increased financial integrity and (2) a tracking process to assess the extent to which the expected results are being achieved.

[8]Accenture was responsible for providing the project management, software, testing, and operation of the technology elements of the COD process. However, as used here, we ascribe the action to FSA because it made the decision to accept and deploy the contractor's work.

In commenting on a draft of this report, FSA's Chief Operating Officer provided updated information and technical comments, but did not comment on our recommendations. Among the comments provided, the Chief Operating Officer (1) stated that the draft report did not adequately portray the level of COD progress that had been made, (2) agreed that FSA was not tracking all expected benefits at this time and provided new information and supporting documentation on its recent efforts in this area, and (3) stated that FSA's "informal" process for communicating lessons had worked well but planned to provide written lessons learned as part of a planned update of its school testing guide. We updated our report to reflect new FSA processes and information, as appropriate. However, we believe that we have accurately portrayed FSA's progress, particularly in light of its need to address operational problems and facilitate the implementation of the common record at thousands of postsecondary schools. In addition, we continue to believe that FSA's ad hoc processes for capturing and disseminating lessons learned do not provide assurance that it has captured and disseminated lessons learned related to schools' implementation of the common record and could overlook important improvements that could be made.

Background

The Department of Education's FSA manages and administers student financial assistance programs authorized under title IV of the Higher Education Act of 1965, as amended. These postsecondary programs include the William D. Ford Federal Direct Loan Program (often called the Direct Loan program), the Federal Family Education Loan Program (often called the Guaranteed Loan program), the Federal Pell Grant Program, and campus-based programs.[9] Annually, these programs together provide about $50 billion in student aid to approximately 8 million students and their families.

During the past three decades, the Department of Education has created many disparate information systems to support these various student financial aid programs. In many cases, these systems—run on multiple operating platforms using different network protocols[10] and maintained

[9]Campus-based programs, which include the Federal Work-Study Program, the Federal Perkins Loan Program, and the Federal Supplemental Educational Opportunity Grant Program, are administered jointly by FSA and postsecondary educational institutions.

[10]For example, the FSA systems environment includes operating platforms, such as IBM OS/390 mainframe, Sun Solaris on Sparc, and Windows NT, and network protocols, such as the Transmission Control Protocol/Internet Protocol and Systems Network Architecture.

and operated by a host of different contractors—were unable to easily exchange the timely, accurate, and useful data needed to ensure the proper management and oversight of the various student financial aid programs. For example, as we reported in 1997, neither the National Student Loan Data System nor other systems were designed for efficient access to reliable student financial aid information, since many systems were incompatible and lacked data standards and common identifiers.[11] In addition, because FSA used three separate systems to originate and/or disburse title IV funds, access to student and school data was fragmented and unreliable. As a result, FSA found it increasingly difficult to quickly access data to support day-to-day operational and management decisions, and schools could not easily access data to obtain a clear picture of the title IV student aid that had been disbursed.

In September 1999, FSA issued its initial modernization blueprint,[12] which was subsequently updated in July 2000, to transform the title IV student financial aid systems using technology. COD is one of four school service business processes[13] in FSA's blueprint and is intended to implement a simplified process for the operation of the Direct Loan and Pell Grant programs. According to FSA's modernization blueprint, the common origination and disbursement process is composed of seven steps involving students, the Department of Education, and schools: (1) obtain applicant data, (2) determine eligibility, (3) determine award, (4) notify the Department of Education of the intent to disburse, (5) obtain funds from Education, (6) disburse funds to student, and (7) close out. A common process to support origination and disbursement is considered critical to FSA's goal of achieving an enterprisewide solution that provides real-time data to students, schools, and financial partners via Web portals.

To implement COD, FSA is using middleware and XML technologies. Specifically, middleware is being used to integrate FSA systems that

[11]U.S. General Accounting Office, *Student Financial Aid Information: Systems Architecture Needed to Improve Programs' Efficiency*, GAO/AIMD-97-122 (Washington, D.C.: July 29, 1997).

[12]FSA's modernization blueprint describes the agency's business requirements, business and technical architecture, and sequencing plan.

[13]The other three processes are program eligibility, program support, and financial transactions.

support the COD process.[14] Traditionally, systems integration would require building separate point-to-point interfaces between every two applications. Although this approach can be effective, it creates several problems, such as (1) every connection between two applications requires custom programming; (2) a lot of connections have to be developed when there are multiple data sources; and (3) whenever the logic or data in one application changes, the accompanying interface often also needs to be altered. Middleware represents an alternative means to the traditional approach, and it can provide a quicker and more robust solution to systems integration. In essence, middleware separates the business application from the technical details of interapplication communications. Thus, middleware can simplify and reduce the number of interfaces for multiple systems because it can handle differences in data formats and record layouts.

As part of the COD process, XML is being used to consolidate multiple legacy record formats previously used by schools to submit data on the Pell Grant and Direct Loan programs.[15] By using an XML-based common record, schools can transmit one file with all of the student's data instead of submitting separate legacy records with redundant student and school information.

Appendix I provides a high-level depiction of the systems and technologies supporting the COD process as of November 2002. As depicted, the COD system can translate or convert legacy records by using middleware. In addition, middleware has been built into several existing systems so that they can establish connectivity and exchange data with the COD system through a common IT infrastructure. This IT infrastructure, called the Enterprise Application Integration (EAI) bus, is also implemented using middleware to route data between systems in a correct format. In addition, as part of the COD process, some schools have begun submitting Pell Grant and Direct Loan data using the XML-based common record.

[14]For additional information on middleware and how it works, see GAO-02-7 and North Carolina Information Resource Management Commission, *North Carolina Statewide Technical Architecture*, which can be found at http://irm.state.nc.us/techarch/chaps/pdffiles/pdflist.htm.

[15]For additional information on XML and how it works, see U.S. General Accounting Office, *Electronic Government: Challenges to Effective Adoption of the Extensible Markup Language*, GAO-02-327 (Washington, D.C.: Apr. 5, 2002).

FSA hired Accenture as its "modernization partner" to help carry out its modernization blueprint, including the implementation of the COD process. Accenture is the prime contractor[16] providing leadership of critical planning activities that are essential to the success of FSA's modernization. Regarding the COD system part of FSA's modernization, FSA also hired an independent verification and validation contractor to review the initial release of this system, which was completed earlier this year.

Progress in Implementing the COD Process, but Critical Work Remains, and Benefits and Lessons Learned Are Not Being Tracked

FSA has made progress in implementing the new COD process. In particular, it has begun implementing (1) its middleware solution in its IT infrastructure and various existing systems, (2) the COD system, and (3) an XML-based common record. However, FSA's implementation of COD is behind schedule, and critical work remains to be completed. For example, the basic COD system was to be completed by mid-October 2002; however, only about three-quarters of the COD basic system requirements had been implemented as of October 23, 2002. In addition, FSA is not tracking whether it is achieving certain benefits because it is still in the process of defining applicable metrics to measure progress. Without such tracking processes, FSA lacks critical information about whether it is achieving expected benefits. Finally, FSA lacks assurance that it has captured and disseminated important lessons learned related to schools' implementation of the common record because it believes that its current ad hoc process is adequate. Accordingly, the thousands of schools that have not yet implemented the common record may not benefit from the experience of those that have.

FSA Has Begun Implementing COD Capabilities, but Critical Work Remains

FSA has made progress in implementing COD. The following are significant elements of the COD process that have been implemented:

- *Deployment of the EAI bus.* As a prerequisite to implementing COD, in late October 2001, FSA deployed its middleware solution in an EAI "bus"—an IT infrastructure that uses middleware to access data from disparate systems, transform the data formats as necessary, and route the data to the appropriate requesting systems, thus enabling data exchange among

[16]Accenture also uses subcontractors to perform some of the requirements related to this contract.

disparate systems. The EAI bus provides the set of technical capabilities necessary to integrate FSA's disparate systems.

- *Initial implementation of basic COD system (release 1.x).*[17] On April 29, 2002, FSA went live with version 1.0 of the basic COD system. As of mid-November 2002, FSA had released an additional five sub-versions of the COD system (e.g., version 1.1). The COD system replaces the Direct Loan Origination System and the Recipient Financial Management System, and it currently processes files for all schools participating in the Pell Grant and Direct Loan programs.[18] According to FSA, in the first 6 months of its operation, the COD system processed just under 16 million transactions, representing Pell Grant and Direct Loan awards totaling almost $10 billion to over 5 million recipients.

- *Implementation of middleware in selected systems.* As of mid-November 2002, FSA had built middleware into seven systems so that these systems can interact with the COD system through the EAI bus. These systems include (1) the Central Processing System, which determines students' eligibility and award levels, and (2) the National Student Loan Data System, which contains loan- and grant-level information and is used by schools to screen student aid applicants to identify ineligible borrowers.

- *Development and implementation of the common record.* Using XML, FSA developed and began implementing a common record that schools can use to submit student financial aid data to the COD system. The common record, designed with assistance from members of the National Council of Higher Education Loan Programs and the Postsecondary Electronic Standards Council, consolidates multiple legacy file formats previously used by the Pell Grant and Direct Loan programs.[19]

[17]"X" represents the sub-version number of the COD system. As of mid-November 2002, FSA planned to deploy a total of seven sub-versions of release 1.x.

[18]FSA plans to keep these two systems functioning until it (1) completes the reconciliation of prior years' processing for direct loans, which is expected to occur by the end of this fiscal year, and (2) migrates the Recipient Financial Management System data to COD, which is expected by the summer of 2003.

[19]The common record also includes data blocks for campus-based programs to simplify school reporting. At this time, schools cannot report these data to FSA because the campus-based program part of the COD system is not yet available. According to a COD official, the campus-based data blocks in the common record are expected to be enabled in the summer of 2003.

Although FSA has made progress in implementing the COD process, critical work remains to be completed. First, FSA is behind schedule in implementing the basic COD system. Although FSA had planned to complete the basic COD system by mid-October 2002, only about three-quarters[20] of the COD basic system requirements had been implemented as of October 23, 2002.[21] For example, as of early November 2002, one of the basic business functions that remains to be implemented is to enable FSA to make automated adjustments in batches to school current funding levels. FSA now estimates that most of the remaining functionality will be completed by the end of September 2003. According to FSA IT and program officials, the implementation of the basic COD functionality was delayed to allow adequate time for testing to ensure the quality of the system.[22]

Second, as of November 19, 2002, Accenture reported several operational problems that needed to be addressed. For example, in some cases, the COD system was incorrectly processing school batch data that contained multiple change records for an individual student. According to COD and contractor officials, the causes of operational problems included unclear requirements and software design defects. An independent verification and validation contractor also found problems with the requirements and design aspects of release 1.0. The COD Contracting Officer's Representative characterized these operational problems as very serious and stated that they could impede operations and the delivery of future COD releases. This same official noted that FSA and Accenture are currently undertaking efforts to address these problems. For example, FSA has established production teams composed of agency and contractor staff to address problems in specific areas. In addition, FSA has established a continuous improvement process to more rigorously manage its relationship with Accenture.

Third, fewer postsecondary schools than planned have implemented the common record. FSA had estimated that 50 schools (out of about 5,500) would implement the common record in fiscal year 2002. However, as of

[20]This percentage does not include functions initially planned to be included in the COD system but subsequently cancelled.

[21]In addition, on September 4, 2002, the COD Development Manager estimated that Accenture had met about 88 percent of the COD production acceptance criteria.

[22]Once release 1.x is completed, FSA plans to implement other functionality, including campus-based program reporting.

November 26, 2002, only 22 schools[23] had implemented and tested the common record with FSA. FSA COD officials attributed the fewer-than-expected number of schools using the common record to schools and vendors not being ready to implement it. FSA expects that the number of schools using the common record will be considerably higher during the next award year (2003–2004) because, by April 2003, it plans to implement and test the common record with EDExpress, a software application FSA distributes free of charge to about 3,000 schools for use in submitting data. In addition, FSA expects that all schools will be using the common record format by March 2004, in time for the 2004–2005 award year.

FSA Is Not Completely Tracking Actual COD Benefits or Lessons Learned Related to Schools' Implementation of the Common Record

In its COD business case, FSA outlined five expected benefits: (1) reduced cost, (2) increased customer satisfaction, (3) increased employee satisfaction, (4) increased financial integrity, and (5) the integration and modernization of legacy systems. An important aspect of implementing an IT investment cited by the Office of Management and Budget[24] and our IT investment management guide[25] is evaluating the results of the investment by determining whether such expected benefits are being achieved. However, as illustrated in table 1, at this time FSA has only some of the data necessary to determine whether it is achieving all expected benefits. In particular, for the increased customer satisfaction and financial integrity benefits, FSA (1) has not fully defined the performance metrics to be used, (2) does not have all baseline data, and/or (3) is not fully tracking whether the benefits are being achieved. In these cases, FSA COD officials stated that they were in the process of developing relevant metrics, which would be tracked to measure the project's performance against expected benefits. However, until FSA develops these data and begins tracking actual benefits and comparing them with expected benefits, it will lack vital data with which to demonstrate actual investment results.

[23]In addition, as of mid-October 2002, five vendors had implemented and tested the common record with FSA. Although FSA does not know how many schools are serviced by these vendors because the vendors consider this information proprietary, some of the 22 schools that have implemented the common record use these vendors.

[24]Office of Management and Budget Circular A-130, *Management of Federal Information Resources* (Nov. 30, 2000).

[25]U.S. General Accounting Office, *Information Technology Investment Management: A Framework for Assessing and Improving Process Maturity*, GAO/AIMD-10.1.23, Exposure Draft (Washington, D.C.: May 2000).

Table 1: Status of FSA Tracking of Actual Benefits of the COD System

Expected benefit	Metrics defined?	Baseline data available?	Benefits tracked?
Reduced cost	Yes—The COD business case identifies decreased costs for systems operations, customer service, and the virtual data center.	Yes	Yes[a]
Increased customer satisfaction	Partially—The COD business case identifies the use of the American Customer Satisfaction Index scores to demonstrate clarity of instructions, ease of submitting data, and accuracy of records. However, FSA COD officials stated that at this time, they did not have approval from the Department of Education to perform this survey; therefore, they are trying to identify alternative metrics that could be used to measure customer satisfaction improvements due to COD.	Partially—According to FSA, baseline data related to the American Customer Satisfaction Survey exist, but other planned metric(s) are not yet defined.	No
Increased employee satisfaction	Not applicable—The COD business case identifies a metric for this expected benefit, but in commenting on our draft report, FSA stated that it has decided to discontinue the use of employee satisfaction as a key performance measure and thus will not be tracking this as an expected benefit of the COD system.	Not applicable	Not applicable
Increased financial integrity	Partially—FSA COD officials stated that they have identified increased school compliance with its requirements that schools substantiate the amount of funds withdrawn within certain time frames as a metric. They also stated that they are currently developing other performance metrics for increased financial integrity but have not set a target date for completing them.	Partially—Baseline data related to the identified metric exist,[b] but other planned metric(s) are not yet defined.	Partially—Tracking the identified metric only.
Integration and modernization of legacy systems	Yes—The COD business case identifies a variety of quantitative and qualitative measures, including the retirement of two legacy applications and the simplification of testing and ongoing development.	Yes	Yes

[a]In providing comments on a draft of this report, FSA's Chief Operating Officer stated that after the completion of our review, FSA had begun tracking this expected benefit against the metrics defined in the business case. FSA also provided supporting documentation that previously was not available. We did not validate these new data.

[b]In providing comments on a draft of this report, FSA's Chief Operating Officer stated that estimated baseline data for the identified metric are available, but FSA is working to develop more formal baseline data for this performance metric.

Source: GAO analysis on the basis of FSA documentation.

FSA IT officials also stated that they plan to have a contractor conduct a postimplementation review of the COD basic system in fiscal year 2003, which is expected to look at the achievement of expected benefits. While

this is an important initiative that could provide FSA with valuable information, it does not take the place of a continuing and systematic process of tracking actual benefits.

According to our IT investment management guide, another critical activity is establishing a process for developing and capturing lessons learned in a written product or knowledge base and disseminating them to decision-makers.[25] Lessons-learned mechanisms serve to communicate acquired knowledge more effectively and to ensure that beneficial information is factored into planning, work processes, and activities. Lessons learned can be based on positive experiences that save money or on negative experiences that result in undesirable outcomes.

FSA has recognized the importance of generating lessons learned in certain areas. For example, it has implemented a process for developing lessons related to managing the relationship between the agency and its prime contractor. However, FSA lacks such a process for capturing or disseminating lessons related to school migration to the common record. FSA COD officials stated that lessons learned pertaining to school migration to the common record are addressed through periodic discussions during biweekly conference calls with schools undergoing testing with FSA and during portions of various FSA-sponsored conferences. FSA COD officials stated that they believed this process for capturing and disseminating lessons learned was adequate.

However, by relying on such an ad hoc process, FSA lacks assurance that it has captured and disseminated all key lessons learned related to schools' implementation of the common record and could overlook important improvements that could be made. In addition, schools that do not attend the conferences may not receive and benefit from the lessons identified in the initial phase of implementation. As a result, schools may encounter problems that could have been avoided or mitigated had they known of other schools' experiences. This could hamper FSA's ability to facilitate the transition of schools to the new common record and thus the agency's ability to fully implement the new COD process and achieve the expected benefits.

In commenting on a draft of this report, FSA stated that it plans to provide lessons learned as part of a planned update to its school testing guide.

[25]GAO/AIMD-10-1.23.

While this is a positive step, it does not replace the need for mechanisms to continuously capture and disseminate acquired knowledge as schools implement the common record.

Table 2 includes examples of lessons learned provided by FSA at our request that were drawn from schools' initial implementation of the common record for the 2002–2003 award year. Such information would be important for the thousands of schools that have not yet implemented the common record so that they can avoid problems during the common record implementation and testing processes.

Table 2: Examples of Lessons Learned Related to School Migration to the Common Record

Lesson learned	Effect
Several schools and vendors did not have the technical staff to support the switch to XML.	FSA had fewer schools participating in testing than initially expected.
Many schools had only a technical contact or a business contact, but not both.	Instructions FSA provided to schools may not be translated properly between the business and technical contacts.
Schools did not sufficiently test their applications before testing them with COD.	Schools and vendors required more support from FSA than anticipated.
Service-level expectations were not well-defined before the start of testing and were not made available to all parties involved.	Schools had unrealistic expectations of the turnaround time required to process their records.
Schools should use an XML tool to validate school XML-based applications before testing with the COD system.	Schools that did not participate in such validations had more errors and a greater chance of their records being rejected upon submission to the COD system.

Source: FSA.

Conclusions

FSA has taken important steps toward achieving full implementation of the new COD process. However, critical actions, such as completing the basic functionality of the COD system and the implementation of the common record at thousands of affected schools, must still be undertaken. In addition, FSA has not yet fully established the metrics and processes to track actual benefits related to all of its expected benefits or the lessons that have been generated by the few schools that have implemented the common record thus far. By not tracking actual benefits, FSA lacks information that is critical to determining whether it is meeting all of its goals. Further, not capturing and disseminating information to schools regarding lessons learned could make achieving these goals more difficult.

Recommendations

To determine the extent to which the new COD process is achieving expected results related to customer satisfaction and financial integrity, we recommend that you direct FSA's Chief Operating Officer to expeditiously develop metrics and baseline data to measure these benefits

and develop a tracking process to assess the extent to which the expected results are being achieved.

To ensure that the schools that have not yet implemented the common record benefit from the experiences of those that have, we recommend that you direct FSA's Chief Operating Officer to establish a process for capturing lessons learned in a written product or knowledge base and for disseminating them to these schools.

Agency Comments and Our Evaluation

In providing written comments on our draft report, FSA's Chief Operating Officer provided technical comments and updated information, but did not comment on our recommendations. Specifically,

- The Chief Operating Officer did not believe the report adequately portrayed the level of COD progress that had been made. In particular, she took issue with our using the completion of 75 percent of COD requirements as an indication of progress. Although the Chief Operating Officer did not disagree with the accuracy of this figure, she stated that FSA's informal analysis indicated that between 85 to 90 percent of COD functions had been implemented, which she believed was a better gauge of progress. We believe that we have accurately portrayed FSA's progress in implementing the COD process. First, since FSA's analysis was "informal," and FSA's supporting documentation had limited detail that we could not validate, we do not agree that this should be the primary basis for an analysis of COD's progress. Second, we included both the percentage of COD's requirements that had been implemented and FSA's estimate in our report. Nevertheless, we modified our report to include additional data provided by FSA regarding the number of transactions processed by the COD system to further indicate progress.

- The Chief Operating Officer agreed that the tracking of all of the expected benefits is not in place at this time, but stated that work is under way in this area. FSA also provided updated information and supporting documentation related to the tracking of some of the expected benefits. We made changes to the report reflecting this new information, as appropriate.

- The Chief Operating Officer agreed that it is important and beneficial to communicate lessons learned, but stated that FSA's informal method for communicating lessons related to school migration to the common record worked well in the first year of COD implementation. FSA also noted that it plans to include lessons learned in a planned update to its school testing

guide. We modified the report to reflect this initiative, but we do not agree that FSA's informal method or its plan to include lessons learned in its testing guide is adequate because these approaches do not provide a continuous process for actively capturing and disseminating lessons learned. As a result, some important lessons may be overlooked, and all schools may not be aware of potential problems associated with implementing the common record.

FSA's written comments, along with our responses, are reproduced in appendix II.

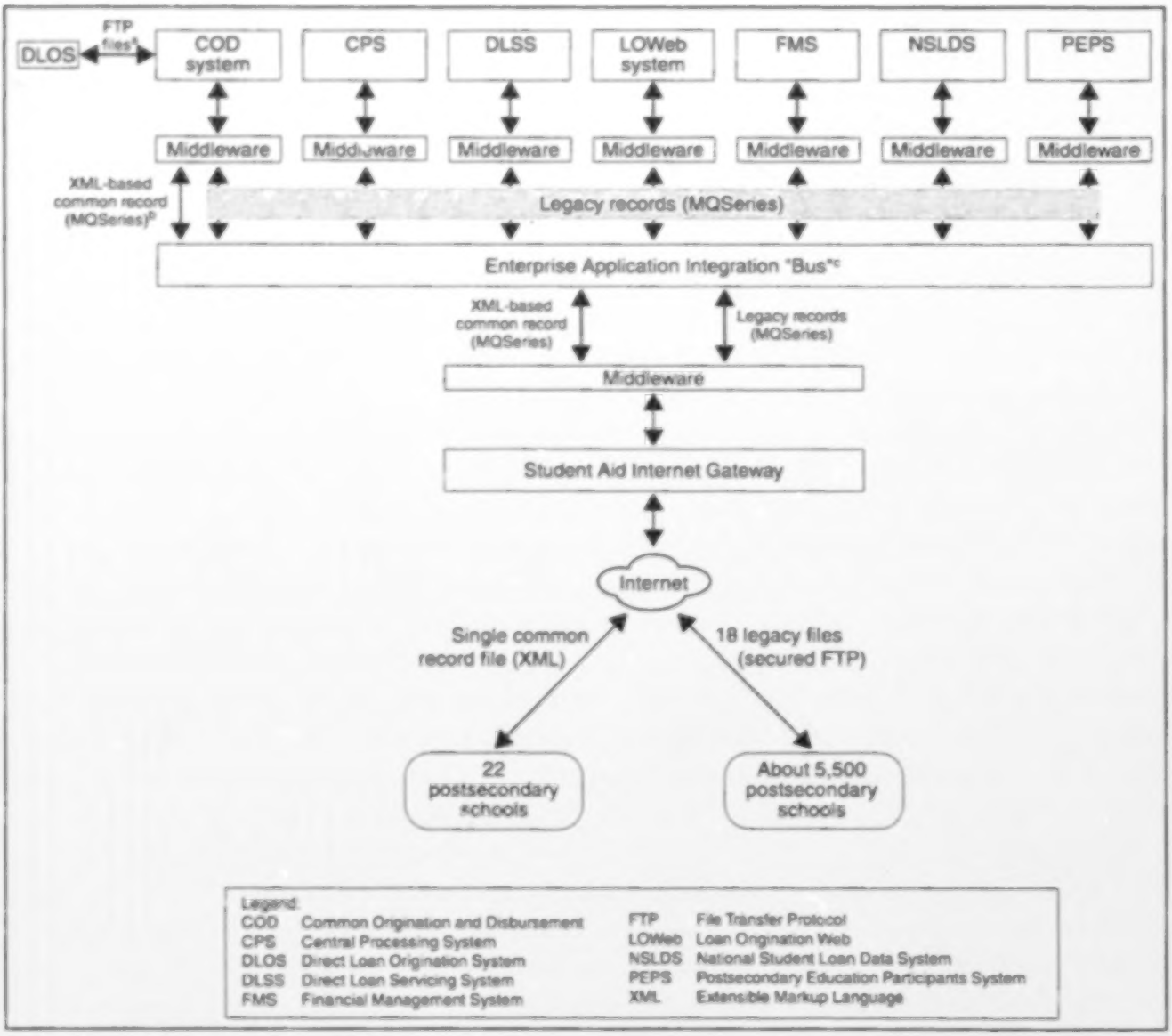
We are sending copies of this report to the appropriate congressional committees, the Secretary of Education, the Chief Operating Officer of Education's Office of Federal Student Aid, and the Director of the Office of Management and Budget. This report will also be available at no charge on the GAO Web site at http://www.gao.gov.

If you have any questions on matters discussed in this report, please contact me at (202) 512-9286 or Linda J. Lambert, Assistant Director, at (202) 512-9556. We can also be reached by E-mail at pownerd@gao.gov and lambertl@gao.gov, respectively. Other individuals making key contributions to this report included Jason B. Bakelar and Anh Q. Le.

Sincerely yours,

David A. Powner
Director (Acting), Information Technology
Management Issues

Appendix I: Systems and Technologies Supporting the Common Origination and Disbursement Process, as of November 2002



Source: GAO analysis of FSA documents.

[a]This is a temporary interface. DLOS is targeted to be retired in fiscal year 2003.

[b]MQSeries is IBM's proprietary message format.

BEST COPY AVAILABLE

[c]This is an information technology infrastructure that enables data exchange among disparate systems.

Appendix II: Comments from the Department of Education's Office of Federal Student Aid

Note: GAO comments supplementing those in the report text appear at the end of this appendix.

UNITED STATES DEPARTMENT OF EDUCATION

Federal Student Aid
Chief Operating Officer

December 18, 2002

Mr. David A. Powner
Director (Acting),
Information Technology
Management Issues
United States General Accounting Office
Washington, DC 20548

Dear Mr. Powner:

I am writing in response to your request for comment on the draft GAO report to Secretary Paige on the implementation of the Common Origination and Disbursement (COD) system by Federal Student Aid. The draft report is entitled, "Federal Student Aid: System Integration Progressing, But Critical Work Remains." Our understanding was that the purpose of this audit was refocused to specifically examine FSA's progress in implementing the Common Origination and Disbursement System (COD), and did not include an examination of FSA's system integration plan nor progress against that plan. Thus, we suggest that GAO change the title to make it clear that the audit was limited to an examination of the implementation of COD. In addition, we ask you to consider the information provided below as you finalize this report.

See comment 1.

Highlights, Results in Brief and Background

See comment 2.

In the "Highlights" section, GAO makes reference to "serious post-implementation operational problems". However, no such problems are identified in the report. Further, in the "Results in Brief" section on page 2 of the report, while GAO states that FSA has made progress in implementing the COD process, and describes four very significant accomplishments, the information that follows is out of context, and suggests that progress made has been minimal. Progress of significance that should be reflected in the report is that in the first six months of COD operations, the system has processed just under 16 million transactions. Those transactions report Pell Grant and Direct Loan awards totaling almost $10 billion to over 5 million recipients. While we certainly acknowledge that the system has had problems, the fact is that we have processed millions of records for billions of dollars, and have given the right money to the right people.

See comment 3.

In addition, the report on page 3 states that "...the COD process is behind schedule, and its ultimate success hinges on FSA's completing critical work, including having thousands of post-secondary schools implement the common record." This statement does not take into consideration that all post-secondary educational institutions participating in the Pell Grant and/or Direct Loan Programs (approximately 5,500) are current users of the COD system,

Our mission is to ensure equal access to education and to promote educational excellence throughout the nation.

See comment 4.

See comment 5.

whether common record users or not. We believe that the GAO report should note that middleware functionality enables FSA to process all Pell Grant and Direct Loan record formats so that our schools can implement the XML formatted common record as their schedule permits. The common record, while new and innovative is only one of the important parts of the COD and it has always been our published intention that schools migrate to using the common record over a three-year period. Since the inception of the Commonline file format, which was first introduced many years ago, it has been standard student aid industry practice to have a planned phase-in of new file formats and processes. This is widely viewed as risk mitigation, and in fact, the industry supports that mitigation by supporting several versions of file formats while its customers adapt to the new process. GAO seems to be implying that phasing in the implementation of the common record was actually an INCREASE in risk, while FSA feels it was prudent as a way to DECREASE risk.

The report on page 3 also discusses in brief the findings of the review that we shall address in the appropriate more detailed section of the draft report. This discussion, as well as the Highlights section, should be revised to reflect changes as a result of the comments that follow.

Progress in Implementing COD Process, But Critical Work Remains and Benefits and Lessons Learned Not Being Tracked

On page 6 and again on page 8 of the report, GAO states that as of October 22 only about three quarters of the COD basic system requirements had been implemented. This is based on an arithmetic calculation using the number of requirements implemented versus the total number of requirements. We believe it is important to note the relative functional value of the implemented and non-implemented requirements, because in fact, if only 75 percent of the critical COD functionality were in place it is doubtful that so many Pell Grants and Direct Loans could have been processed through the current date.

As previously discussed with GAO staff, FSA COD IT development managers performed an informal analysis of the percentage of COD functionality that was implemented by the end of September 2002, as well as provided an analysis of the requirements in the initial 1.0 COD software release against the contract's 1.0 acceptance criteria. In both cases, the development managers provided an estimate that between 85-90 percent of the functionality was implemented and that the critical functionality necessary to process records had been implemented. We have replicated virtually all of the existing functionality of the two previous systems into an integrated common system, as well as provided a number of enhancements that please our customers and improve financial integrity. It seems to FSA that our goal of integrating existing systems into a common system has been met, although we recognize that there is support functionality that still needs to be completed.

FSA Not Completely Tracking Actual COD Benefits or Lessons Learned Related to Schools' Implementation of the Common Record

On pages 3, 6, and in detail beginning on page 9 of the report, the GAO states that FSA is not tracking whether it is achieving certain expected benefits (as discussed in the FSA COD system

See comment 6.

business case). We agree that all of the tracking of the expected benefits is not in place at this time but work on all is underway. The following is an update to each of the items listed in Table 1 on page 11.

Reduced Cost. The Contracting Officer's Representative for the COD system has been tracking monthly COD costs for the 6 months of COD operations and has compared those costs to the baseline legacy system costs. However, as noted in the report, those costs were not broken down into the component business case costs of Operations, Customer Service, and virtual data center costs at the time of the GAO review team data collection. As part of our response, we are providing an excel spreadsheet (Attachment 1) containing such a comparison for the five months of COD operations in FY 02 with the understanding that this is an on-going tracking of this expected benefit.

Increased Customer Satisfaction. Although FSA has for several years conducted a valid and reliable survey of its customers, the Department intends to modify the approach to, among other things, eliminate duplicate surveys of the Department's customers. During this transition, no survey was conducted in FY2002, so we have no data for this indicator. However, we certainly intend to measure customer satisfaction, and as you noted, we are in the process of identifying alternative metrics that could be used to measure customer satisfaction improvements due to COD and we agree that it may be necessary to alter the COD contract to do so.

Increase Employee Satisfaction. FSA has decided to discontinue employee satisfaction as a key performance measure for the organization and therefore, will not be using this activity as an expected benefit of the COD system.

Increased Financial Integrity. FSA is tracking the performance of participating institutions against the key financial requirement of reporting actual disbursements of Pell Grants and Direct Loans within 30 days of drawing the funds down. GAO was provided with the procedures being employed by the COD Customer Service Center to monitor and act on the resulting performance data related to this key financial integrity measure. We are attaching a copy of the most recent weekly monitoring report (Attachment 2). This report demonstrates for the week of 12/02/02-12/06/02, a total of 421 of 5,500 (approximately 7.6%) participating schools are outside the 30-day requirement. We believe that this result is very noteworthy given that we have deliberately not aggressively pursued the schools compliance with this requirement this early into the implementation of COD. This 7.6% is compared to an estimate of 15-20% of schools being non-compliant with that requirement for any given period under the legacy systems. FSA is working to develop a more formal baseline set of numbers for this performance measure.

Lessons Learned Related to School Testing. On page 12 in the report, GAO took issue with the manner in which lessons learned during school testing were being communicated to the 22 full participant schools. FSA clearly understands the importance and benefits that can be derived by communication of lessons learned. FSA employed a more informal method of communicating lessons learned because of the limited number of full participant schools in this

3

See comment 7.

See comment 8.

inaugural year of COD implementation. This process worked well for this year, but FSA is providing a more formal method of disseminating this type of information to full COD participant schools that will test in the upcoming 03-04 COD year. GAO was provided with a set of slides used at the most recent FSA sponsored Electronic Access Conference held this month. One of the slides was labeled School Testing Lessons Learned (Attachment 3). In addition, the 03-04 School COD Testing Guide under development will have a section on lessons learned from the schools and financial aid software vendors that tested with COD in the 02-03 COD year. We expect that document to be available in January 2003.

Thank you for this opportunity to comment on the draft report on the implementation of COD.

Sincerely,

Theresa S. Shaw

4

The following are GAO's comments on the Department of Education's Office of Federal Student Aid's letter dated December 18, 2002.

GAO Comments

1. We revised the draft report title to clarify that our follow-up review was focused on assessing FSA's progress in implementing the COD process.

2. Information related to operational problems was contained in the draft report. We asked the COD Contracting Officer's Representative to characterize these problems, and he stated that they were very serious. In addition, we confirmed the seriousness of these problems at the conclusion of our review with FSA IT and program officials.

3. We modified this report to include data on the number of transactions processed. We also modified our report to clarify that all schools participating in the Pell Grant and/or Direct Loan programs currently use the COD system.

4. We do not agree that the report implies that FSA's use of a phased-in approach in implementing the common record increases risks. Instead, this report notes that the implementation is not yet complete.

5. We believe that we have accurately portrayed FSA's progress in implementing the COD process. First, since FSA's analysis was "informal," and FSA's supporting documentation had limited detail that we could not validate, we do not agree that the COD Development Manager's functionality estimate should be the primary basis for an analysis of COD's progress. Second, we included both the percentage of COD's requirements that had been implemented and FSA's estimate in our report.

6. We modified our report to reflect this updated information as appropriate.

7. We do not agree that FSA's informal process for capturing and disseminating lessons learned was adequate because (1) it may lead to important lessons being overlooked and (2) all schools may not be aware of potential problems associated with implementing the common record.

8. We modified this report to reflect that FSA plans to include lessons learned in a planned update to its school testing guide. While this is a

positive step, it does not replace the need for mechanisms to continuously capture and disseminate acquired knowledge as schools implement the common record.

GAO's Mission

The General Accounting Office, the investigative arm of Congress, exists to support Congress in meeting its constitutional responsibilities and to help improve the performance and accountability of the federal government for the American people. GAO examines the use of public funds; evaluates federal programs and policies; and provides analyses, recommendations, and other assistance to help Congress make informed oversight, policy, and funding decisions. GAO's commitment to good government is reflected in its core values of accountability, integrity, and reliability.

Obtaining Copies of GAO Reports and Testimony

The fastest and easiest way to obtain copies of GAO documents at no cost is through the Internet. GAO's Web site (www.gao.gov) contains abstracts and full-text files of current reports and testimony and an expanding archive of older products. The Web site features a search engine to help you locate documents using key words and phrases. You can print these documents in their entirety, including charts and other graphics.

Each day, GAO issues a list of newly released reports, testimony, and correspondence. GAO posts this list, known as "Today's Reports," on its Web site daily. The list contains links to the full-text document files. To have GAO e-mail this list to you every afternoon, go to www.gao.gov and select "Subscribe to daily E-mail alert for newly released products" under the GAO Reports heading.

Order by Mail or Phone

The first copy of each printed report is free. Additional copies are $2 each. A check or money order should be made out to the Superintendent of Documents. GAO also accepts VISA and Mastercard. Orders for 100 or more copies mailed to a single address are discounted 25 percent. Orders should be sent to:

U.S. General Accounting Office
441 G Street NW, Room LM
Washington, D.C. 20548

To order by Phone:

Voice:	(202) 512-6000
TDD:	(202) 512-2537
Fax:	(202) 512-6061

To Report Fraud, Waste, and Abuse in Federal Programs

Contact:

Web site: www.gao.gov/fraudnet/fraudnet.htm
E-mail: fraudnet@gao.gov
Automated answering system: (800) 424-5454 or (202) 512-7470

Public Affairs

Jeff Nelligan, managing director, NelliganJ@gao.gov (202) 512-4800
U.S. General Accounting Office, 441 G Street NW, Room 7149
Washington, D.C. 20548

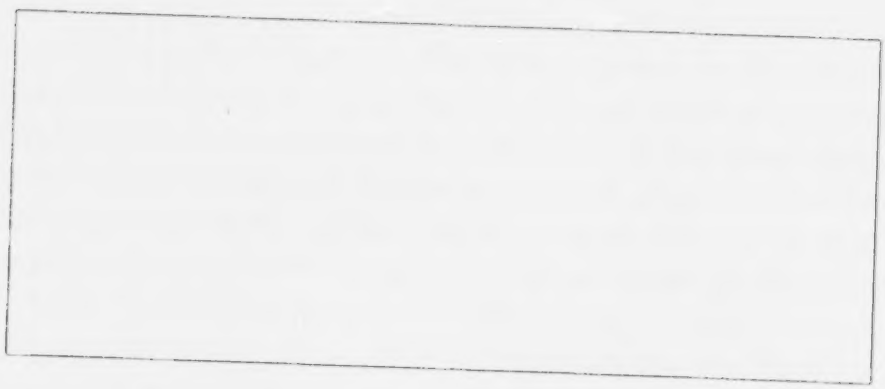
PRINTED ON RECYCLED PAPER

United States
General Accounting Office
Washington, D.C. 20548-0001

Official Business
Penalty for Private Use $300

Address Service Requested

Presorted Standard
Postage & Fees Paid
GAO
Permit No. G100



BEST COPY AVAILABLE

U.S. Department of Education
Office of Educational Research and Improvement (OERI)
National Library of Education (NLE)
Educational Resources Information Center (ERIC)

NOTICE

Reproduction Basis

	This document is covered by a signed "Reproduction Release (Blanket)" form (on file within the ERIC system), encompassing all or classes of documents from its source organization and, therefore, does not require a "Specific Document" Release form.
X	This document is Federally-funded, or carries its own permission to reproduce, or is otherwise in the public domain and, therefore, may be reproduced by ERIC without a signed Reproduction Release form (either "Specific Document" or "Blanket").